

MATERIAL SAFETY DATA SHEET

SRM Supplier: National Institute of Standards and Technology
Standard Reference Materials Program
Bldg. 202 Rm. 211
Gaithersburg, Maryland 20899

SRM Number: 1883a
MSDS Number: 1883a
SRM Name: Calcium Aluminate Cement
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SECTION I. MATERIAL IDENTIFICATION

Material Name: Calcium Aluminate Cement

Description: SRM 1883a is a hydraulic binder with an alumina content of approximately 70 %. It is composed almost entirely (99 %) of calcium aluminate phases.

Other Designations: Hydraulic binder; fused calcium aluminate; aluminum calcium oxide; calcium aluminum oxide; Secar 71 cement.

Chemical Formula: Primarily $\text{CaO} \cdot \text{Al}_2\text{O}_3$ and $\text{CaO} \cdot (\text{Al}_2\text{O}_3)_2$

CAS Registry Number: 12042-68-1

DOT Classification: Not hazardous by DOT regulations

Manufacturer/Supplier: Available from a number of suppliers

SECTION II. HAZARDOUS INGREDIENTS

Hazardous Components	Nominal Concentration (%)	Exposure Limits and Toxicity Data*
Fused Calcium Aluminate (as Nuisance Dust)	> 99	OSHA PEL-TWA: 5 mg/m ³ (respirable particulate) OSHA PEL-TWA: 15 mg/m ³ (total particulate) ACGIH TLV-TWA: 5 mg/m ³ (respirable particulate) ACIH TLV-TWA: 10 mg/m ³ (total particulate)

*Limits set for the compound as a whole, **NOT** the individual components.

SECTION III. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance and Odor: White, odorless powder
Specific Gravity: 3.0 g/cm ³
Melting Point (Pyrometric Cone Equivalent): 1680 °C
Solubility in Water: Negligible

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: N/A

Method Used: N/A

Autoignition Temperature: N/A

Flammability Limits in Air (Volume %): UPPER: N/A
LOWER: N/A

Unusual Fire and Explosion Hazards: None reported

Extinguishing Media: Use extinguishing media that is appropriate to the surrounding fire.

Special Fire Procedures: Fire fighters should wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in the pressure-demand or positive-pressure mode.

SECTION V. REACTIVITY DATA

Stability: X Stable Unstable

Conditions to Avoid: None reported

Incompatibility (Materials to Avoid): This material is inert.

Hazardous Decomposition or Byproducts: None

Hazardous Polymerization: Will Occur X Will Not Occur

SECTION VI. HEALTH HAZARD DATA

Route of Entry: X Inhalation Skin X Ingestion

Health Hazards (Acute and Chronic): Cement is a nuisance dust and an irritant to the skin, eyes, nose, and throat. This material is abrasive to skin.

Listed as a Carcinogen/Potential Carcinogen:

	Yes	No
In the National Toxicology Program (NTP) Report on Carcinogens	<u> </u>	<u> X </u>
In the International Agency for Research on Cancer (IARC) Monographs	<u> </u>	<u> X </u>
By the Occupational Safety and Health Administration (OSHA)	<u> </u>	<u> X </u>

EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact: Remove contaminated shoes and clothing. Rinse affected area with large amounts of water followed by washing the area with soap and water. Obtain medical assistance if necessary.

Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for a minimum of 15 minutes. Obtain medical assistance if necessary.

Inhalation: If inhaled, remove the victim to fresh air. If breathing is difficult, give oxygen; if victim is not breathing, give artificial respiration. Obtain medical assistance for discomfort.

Ingestion: Obtain medical assistance if necessary.

TARGET ORGAN(S) OF ATTACK: Upper respiratory tract, skin, and eyes

SECTION VII. PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled: Treat as a nuisance dust. Provide adequate ventilation. Cleanup personnel must be protected against dust inhalation. Avoid creating airborne dust conditions. Cleanup methods such as vacuuming (with an appropriate filter) or wet mopping minimizes dust dispersion. Carefully scoop up spilled dry material into a suitable container (with secure lid) for disposal or reclamation.

Waste Disposal: There are no special precautions. Follow all federal, state and local regulations.

Handling and Storage: Provide general and local ventilation systems to maintain airborne concentrations below the OSHA PEL and ACGIH TLV. Local exhaust ventilation is preferred since it prevents contaminant dispersion into the work area by controlling it at its source. Under conditions of frequent use or heavy exposure, a nuisance dust respirator may be needed. Wear chemical safety goggles, gloves, and other protective clothing to avoid contact with eyes and skin.

NOTE: Contact lenses pose a special problem; soft lenses may absorb irritants, and all lenses concentrate them. **DO NOT** wear contact lenses in the laboratory.

Store in tightly closed containers in a cool, dry, well-ventilated area. Protect containers from physical damage.

SECTION VIII. SOURCE DATA/OTHER COMMENTS

Sources: Lafarge Calcium Aluminates, Inc., MSDS-15 SECAR 71, January 1, 1999.
MDL Information Systems, Inc., MSDS *Calcium Aluminate*, September 16, 1999.

Disclaimer: Physical and chemical data contained in this MSDS are provided for use in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data on the MSDS. The certified values for this material are given only on the NIST Certificate of Analysis.